DOCUMENT RESUME

ED 211 949 CS 006 457

AUTHOR Juel, Connie; Roper/Schneider, Diane
TITLE The Growth of Letter-Sound Correspondence Knowledge in First Grade and Its Relation to Reading Achievement and Programs.
PUB DATE Dec 81
NOTE 11p.; Paper presented at the Annual Meeting of the National Reading Conference (31st, Dallas, TX, December 2-5, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Processes; *Decoding (Reading); Grade 1; *Phoneme Grapheme Correspondence; Phonics; Primary Education; *Reading Materials; Reading Processes; *Reading Research; Reading Skills

ABSTRACT

Ninety-three first grade children participated in a study that examined the relationship among instructional materials, other factors such as test scores, and the growth and application of letter-sound correspondence knowledge. The study also sought to determine the importance of letter-sound correspondence knowledge in the acquisition and performance of reading skills. The subjects, who could not read upon entering first grade, were randomly placed in either a phonics-oriented series with text and instruction emphasizing primarily regular decodable patterned words, or in a series that focused on high interest stories with text and instruction split more equally between regularly and irregularly decodable patterned words. Over the course of a year, the Metropolitan Readiness Test, the Iowa Test of Basic Skills, the Basal Core Word List Test, the Bryant Test of Basic Decoding Skills and the Switch Word List Test were given, some twice, for a total of nine tests. The results suggested that while the materials may be influential in facilitating early letter-sound correspondence knowledge, sheer exposure to lots of words also allows children to induce this information. The results further suggest that first grade students who acquire such knowledge do better reading both the words in their basals and the words on which they have not received instruction. (HTH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED211949

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Connie Juel
Assistant Professor
University of Texas at Austin
Department of Curriculum
and Instruction
Educational Building 406
Austin, Texas 78712
(512) 471-4041

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Connie Juel
Diane Roper/Schneider
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The Growth of Letter-Sound Correspondence Knowledge in First Grade and Its Relation to Reading Achievement and Programs

Connie Juel
University of Texas at Austin

Diane Roper/Schneider
University of Texas at Austin

The primary focus of this study was to monitor the growth of letter-sound correspondence knowledge in first graders. We were interested in whether the development of letter-sound correspondence knowledge was fostered or hindered by instruction in two very different types of reading series. In addition, we wanted to see if letter-sound correspondence knowledge related to reading achievement throughout, as well as at the end of, the first grade year.

There were two basic research questions: 1) What relationship existed among instructional materials, other factors (e.g., entering Metropolitan Readiness scores) and the growth and application of

CS006457

letter-sound correspondence knowledge? and 2) How important is letter-sound correspondence knowledge in the acquisition and performance of reading skills in first grade?

Subjects

The sample consisted of 93 children--sixty-one Anglo and thirty-two other, most of whom were Mexican American. Approximately half the students were male and half female. The children were non-readers upon entering first grade as determined by teacher and experimenter screening on reading word lists and informal reading inventories. However, the children had no known reason why they should not succeed in learning to read (e.g., no known records of unusual kindergarten behaviors). All children were fluent English speakers, scored above the 40th percentile on the total Metropolitan Readiness Test, and were placed in the middle reading group within their classrooms.

The children came from eleven classrooms in three schools. School #1 was an "open concept" structure in a middle to upper middle class neighborhood. Its students were predominantly Anglo. School #2 was an older, more traditional structure in a middle to lower middle class neighborhood. Some of its students were bussed to achieve racial integration. School #3 was an older structure to which exterior halled classrooms had been added. It was in a lower to middle SES area and was naturally integrated. There was no significant difference between schools as shown by the Metropolitan's national percentile norms.

Approximately half the students were placed in a phonics oriented series with text and instruction which emphasized primarily regular

decodable patterned words (the 1972 Economy series). The other half of the children were in a series which focused on high interest stories and whose text and instruction, therefore, had more equality between regular and irregularly decodable patterned words (the 1971 Houghton Mifflin series). Both texts were used in all three schools.

Procedure

Nine tests were given during the 1980-81 school year. The Metropolitan Readiness Test and the Iowa Test of Basic Skills were administered by the district in September and April respectively. The Basal Core Word List Test was given in Nov./Dec., February, and May. The Bryant Test of Basic Decoding Skills was given in Nov./Dec., February, and April. This last Bryant testing coincided with the administration of the ITBS. The Switch List Test was given in May.

The Bryant consists of a list of fifty nonsense, common rule governed words which assesses growth and application in letter-sound correspondence knowledge. The Basal Word List consisted of over 500 core words, as determined by the respective publishers, from the first grade texts. At each time of testing the specific listed words used were determined by instructional progress through the series and the student's past test performance. The Switch List consisted of approximately 200 words which were unique to each series' core list; all words common to both Basal Lists having been eliminated. When this test was administered, children in basal series #1 (Economy) were asked to read list words from series #2 (Houghton Mifflin) and vice versa. It was assumed that while students may have seen these words in print, they had not received instruction based on them.

Analysis

Independent factors of interest (e.g., MRT scores, ethnicity, school, basal, classroom, etc.) were used to predict performance on the dependent measures (Iowa Test, Switch List, Basal Testing, etc.) through multiple regression analysis. The unique proportion of variance accounted for by each factor was deteremined by comparing full to reduced regression runs. In addition, means, SD's, Pearson correlations, and some one-way ANOVAs were obtained. All results discussed as significant (for both the ANOVAs and multiple regressions) had F values of at least .01.

Results and Discussion

In determining what, if any, relationship existed among instructional materials, other factors, and the growth and application of letter-sound correspondence knowledge, several one-way ANOVAs were performed. Results indicated that mean correct response performance on the first Bryant test was significant by ethnicity, by school, and by basal. Anglo students, School #1 students, and students in the phonics basal performed best. Performance on Bryant #2 was not significant by either ethnicity or school, but the influence of the basal remained significant, with the phonics oriented basal students continuing their lead. However, none of these three factors was significant in predicting performance on Bryant #3 (see Figure 1).

Results of multiple regression analyses to determine the unique contribution of predictor variables on Bryant performance showed that the basal contributed to 20% of the variance on Bryant #1 and 15% on Bryant #2 and #3. The Metropolitan showed a unique contribution of

only 6% on Bryant #1, increased to 11% on Bryant #2, and jumped to 21% on Bryant #3. (We also looked at the contribution of each of the MRT subtests--auditory discrimination, visual discrimination, and language--and found none to be more predictive than the MRT total score for any of the Bryants.) The steady increase in prediction of the MRT and the decrease in the contribution of the basal suggests that as the year progressed, entry level readiness skills, as measured or reflected in MRT scores, became more important in the application of letter-sound correspondence knowledge. In addition, the drop in the unique contribution of the basal suggests that, while materials are very important at the beginning of reading instruction in first grade, they become less important as the year progresses. That is, the abstraction of letter-sound correspondence knowledge can initially be facilitated by materials which have lots of "regular" words, but sheer exposure to lots of words (as occurs in both series by the end of first grade) can also provide the "data" by which such knowledge develops. Such an interpretation is consistent with the results of the one-way ANOVAs which revealed an initial, but not continuing advantage of the phonics series (see Figure 1).

Separate multiple regression analyses were performed to determine the unique contribution of factors predicting performance on the word list tests for each respective basal. For those children in the phonics oriented series, the MRT's independent power of prediction decreased throughout the year, showing an 8% contribution on Basal Test #1, 6% on Basal Test #2 and less than 1% on Basal Test #3. The unique contri-

bution of class dropped from 19% in the Nov./Dec. testing to 15% on the May Basal Test #3. But the contribution of the Bryant rose steadily throughout the year from 10% on Basal Test #1, 14% on Basal Test #2 to 16% on Basal Test #3. These findings fit with the instructional focus of the phonic oriented series in which children were exposed to and recieved instruction in letter-sound correspondence. As a result, it appears that they learned the rules and could apply them to words from their series.

These same predictor variables showed a somewhat different pattern for performance in the more eclectic word pattern series. The MRT had less than 1% predictive value throughout the year. The independent contribution of class was a whopping 67% on Basal Test #1, dropped to 54% on Basal Test #2, and then fell to 13% on Basal Test #3. The unique contribution of the Bryant #1 on Basal Test #1 was less than 1%, Bryant #2 on Basal Test #2 was only slightly above 1%, while the independent contribution of Bryant #3 toward performance on Basal Test #3 jumped to 16%. These proportions suggest that once beginning readers are exposed to enough words to reach the saturation point for remembering words by sight (as likely occurred by Basal Test #3), letter-sound correspondence knowledge develops implicitly through exposure to print and becomes an important word recognition strategy. The strong initial impact of classroom further suggests that success in early "sight" learning is very dependent on what goes on instructionally within the reading group. In the phonics series, however, the materials themselves appeared to overshadow the impact of specific group instruction or practices.

In determining how important letter-sound correspondence knowledge is in the acquisition and performance of reading skills, the Basal Test #3, the Iowa Reading Total Score (reading comprehension and reading vocabulary), and the Switch List were used as the criterion variables. Once again the MRT total score, classroom, and performance on the Bryant #3 were used as predictor variables. As noted, in both basal series the independent contribution of the Bryant #3 toward performance on the Basal Test #3 was 16%. (The correlation of the Bryant #3 Test--regardless of basal series--with the performance on Basal Test #3 was + .67.) The unique contribution of class on Basal Test #3 was slightly less at 15% and 13% respectively in the two series.

Performance on the Switch List correlated +.43 with the Iowa Total score and the Bryant #3 performance correlated +.55 with the Iowa. The unique contribution of class toward predicting the Iowa total was 17%, but the independent contribution of the Bryant #3 was only 8%.

With regard to performance on the Switch List, class made a unique contribution of only 8%, but the Bryant #3's independent contribution to the total variance within Switch List performance was 22%. In addition, the Bryant #3 correlated +.72 with the Switch List.

These results suggest that the ITBS may be measuring something different from that which the Basal and/or Switch List are measuring. But it is clear that children who have acquired letter-sound correspondence knowledge do better both on reading the words that have been in their basals (Basal Test #3) and, perhaps more importantly, they do better reading words which they likely have not received instruction on or even read before (Switch List words).

Conclusions

Results of the current study thus suggest that, while the materials may be influential in facilitating early letter-sound correspondence knowledge, sheer exposure to lots of words also allows children to induce this information. Results further suggest that first graders who do indeed acquire such knowledge do better both in reading the words in their basals and reading words on which they have not received instruction.

References

Bryant, N. D. . Diagnostic Test of Basic Decoding Skills. Teachers College, Columbia University, 1975.

Durr, W., LePere, J., & Alsin, M. L. The Houghton Mifflin readers, 1st grade level. Tigers, Lions, Dinosaurs, Rainbows, Signposts. Boston: Houghton Mifflin Co., 1971.

Harris, T., Creekmore, M., & Greenman, M. Keys to reading, 1st grade level. Pug, Sun up, Zip pop go, Green feet, Blue dilly dilly. Oklahoma City: The Economy Company, 1972.

Hieronymus, A. N., Lindquist, E. F., & Hoover, H. D. Iowa Test of Basic Skills, Primary Battery, Form 7. Houghton Mifflin Co., 1980.

Nurss, J., & McGauvran, M. Metropolitan Readiness Tests, Level II. Harcourt Brace Jovanovich, Inc., 1976.

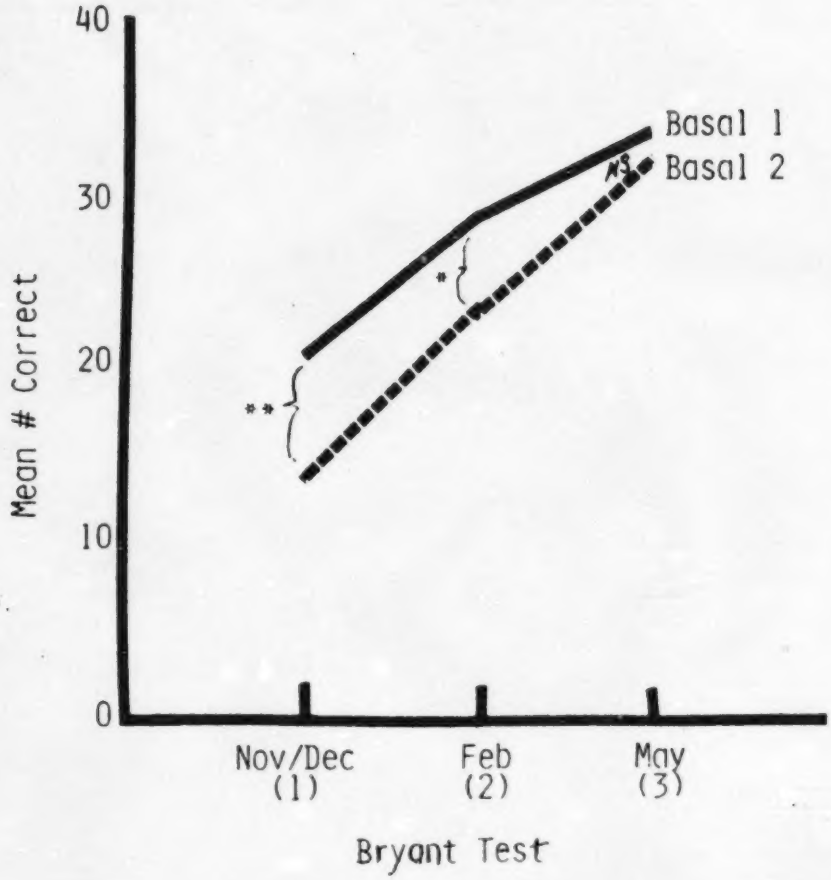

FIGURE 1

Influence of Basal Series on Bryant Performance:

** Bryant 1 by Basal $F(1,86) = 13.8$, $p < .001$;

* Bryant 2 by Basal $F(1,88) = 5.5$, $p < .02$;

NS Bryant 3 by Basal $F(1,82) = .5$.